EDITORIAL

Value of rapid-access chest pain clinics

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Rapid-access chest pain clinics have contributed enormously to improvements under the NSF coronary heart disease banner. *See article on page 458*

Patients who believe that they may have heart disease generally wish to have their fears confirmed or denied rapidly. In the 1990s in England, this was not happening. There were long waits for outpatient clinics, for interventions of all kinds and for cardiological opinions; waits of 12 months were not unusual.

Feedback from patients advising the Department of Health at that time and surveys of the public showed, unsurprisingly, that patients placed greater emphasis on access and waiting than they did on other aspects of care. In addition, many health professionals knew that many other areas of cardiac care were also in need of major overhaul and modernisation.

The *National Service Framework for coronary heart disease* (NSF for CHD) published in March 2000 set out to modernise cardiac services in England, crucially bringing together clinical and government agendas into a common purpose.[1] The framework recognised that many of the patients waiting longer were those with chest pain of suspected cardiac origin or possible angina.

Chapter four of the NSF identified rapid-access clinics as an immediate priority for the NHS in England. The policy was based on the evidence emerging from clinics in south and east London, including one clinic run by Sekhri *et al*.[2] In these early models, patients were referred by their general practitioner to the clinic by ''fax'' and were usually seen on the next working day.

The assessment offered would include a full medical history, examination, ECG, blood tests and exercise testing where indicated. The process was undertaken as a ''one-stop shop''. Other similar models that improved access to exercise testing and specialist advice were also identified.[3–5]

The NSF stated that all hospitals should introduce hospital-wide protocols for the management of patients with angina and required the NHS to set up 50 rapid-access clinics by April 2001, a further 50 by April 2002, with national rollout thereafter.

The framework simultaneously required primary care services to identify all patients with CHD on their lists in a much more systematic fashion and to refer those who were under-investigated for a more comprehensive assessment. The inevitable consequence would be an increase in referrals to clinics and that additional resources would be necessary to meet the increase in demand.

A total of £20 million was made available, allocated by region, to allow the growth of a national network of such clinics so that by April 2004, a rapid-access clinic was available in every acute hospital in England. Many of the clinics recognised that they would need to develop new models of service delivery if the additional volume of work was to be adequately met. In fact, the rate of referral of patients doubled from 14 000 each quarter to 28 000 between 2002 and 2006.[6]

A number of clinics opted to develop nurse- and cardiac physiologist-led models of care. The plan required clinics to see patients who met the national and local referral criteria within 2 weeks of referral, accompanied by explicit directions that acute presentations should be referred to hospital for immediate assessment rather than the semi-urgent route that the rapid-access clinic model provided.

Systems were in place to performance manage the development of these services through supervision at primary care, health authority and national levels.

WHERE ARE WE NOW?

Across England, there is now a network of over 160 rapid-access clinics in which 96% of patients are seen within 2 weeks of referral. The national monitoring of these clinics suggests that of the patients referred, just over 50% are characterised as having chest pain of cardiac origin suitable for more detailed investigation.

The national monitoring did not evaluate the accuracy of the diagnoses made in these clinics or their ability to identify individuals at high risk.

NEW EVIDENCE

Sekhri *et al*[2] from the east London group address these important issues for the first time in this issue **(*see page 458*)**. In essence, their findings vindicate the development of the rapid-access model beyond the delivery of improved waiting times.

They demonstrate that their clinics in east London can identify a group of patients at much higher risk of a coronary event but, worryingly, they also demonstrate that some patients thought to have non-cardiac pain are not immune from further events. After 2.6 years of follow-up, nearly one-third of the patients reaching the primary end point of death due to CHD, acute coronary syndrome or admission with unstable angina emerged from the lower-risk group. They tended to be younger, were less likely to have typical

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Abbreviations: CHD, coronary heart disease; NSF, National Service Framework

symptoms, more likely to be of South Asian origin and more likely to have a normal ECG than those thought to have angina.

Although these results are disturbing, they are not altogether surprising. Experienced clinicians will immediately recognise that this varied group of individuals will represent a complex mix of patients with milder disease, some with type 2 diabetes, some with microvascular angina and some in whom the ancient art of exercise testing and clinical assessment missed more serious disease. Some would have had symptoms that were entirely benign from a cardiovascular standpoint.

Overall, the non-cardiac group had lower standardised mortality ratios than the general population, but higher CHD standardised mortality ratios in those $\leqslant$65 years of age.

IMPLICATIONS FOR SERVICE DESIGN

What is clear is that rapid-access clinics provide a good way of identifying people at higher risk. Such patients might benefit from a more interventional approach to their care, whether by aggressive secondary prevention or coronary intervention. For those in whom the initial assessment suggests a non-cardiac cause, it would seem reasonable to rely on this verdict in older people (those $\geqslant$65 years of age), but in younger patients, a second line of diagnostic assessment might be justifiable using some type of perfusion imaging.

In conclusion, the rapid-access chest pain clinic is a model of care that has contributed enormously to the overall improvements brought about by clinicians in England under the banner of the NSF for CHD. Further attention should be focused on those in whom the initial assessment suggests a non-cardiac cause of the initial symptoms.

Competing interests: None.

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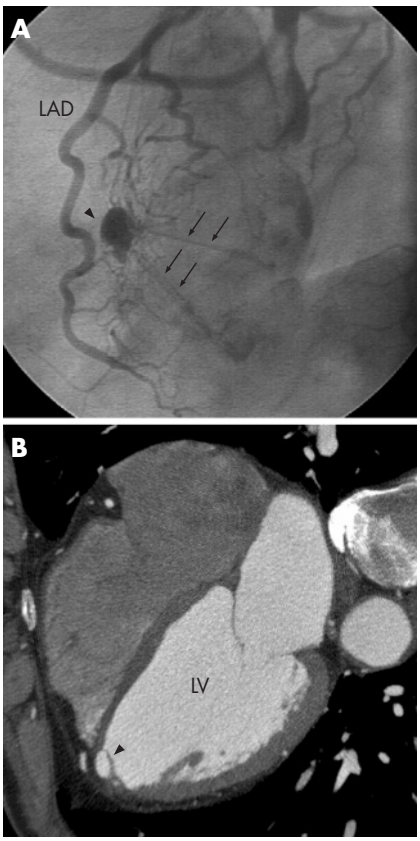
IMAGES IN CARDIOLOGY

A post-infarction myocardium sinus



A 67-year-old Chinese man with a history of hypertension, diabetes mellitus and hyperlipidaemia was admitted for coronary angiographic study. Two years ago, he had an episode of acute myocardial infarction, for which he was treated by intravenous thrombolytic therapy, followed by percutaneous coronary intervention with stent implantation of the left anterior descending coronary artery (LAD).

He had increasing exertional dyspnoea and effort angina. The electrocardiography showed Q wave formation associated with ST segment elevation over the V_{2-4} leads. Coronary angiographic study showed that there was no instent restenosis, and that the blood flow of the LAD was normal. Interestingly, there was a myocardial sinus (panel A, arrowhead) measuring 13.5×7.7×7.2 mm in size, located in the anterior-apical wall, with profuse feeding arteries from the LAD and its branches. During the diastolic phase, the cine-angiogram revealed two tiny exit holes from the sinus, with ejecting blood flow into the left ventricular (LV) cavity (panel A, arrows). Under cine-angiographic study, this phenomenon appeared like the firing of two mechanical guns. CT study of the heart clearly demonstrated that this sinus was located at the anterior apical myocardium (panel B, arrowhead). The formation of this myocardial sinus is probably the result of previous myocardial infarction with myocardial necrosis and formation of an intramyocardial cavity with feeding arteries from the LAD. No coronary intervention was undertaken since the feeding arteries of this sinus were originated from many branches of the LAD.

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